

DETAILED ACTION

- Claims 2, 4-6, 16 and 18-20 have been canceled.
- Claims 1, 7, 10, 17, 21 and 32 have been amended.
- Claims 1, 3, 7-15, 17 and 21-32 remain pending in the application.

Response to Arguments

Applicant's arguments with respect to claims 1, 2, 7-15, 17 and 21-32 have been considered but are moot in view of the new ground(s) of rejection.

Applicant argues on pages 10-11 that "Lundby fails to disclose or suggest any of the following:

- the SIR value is measured on the pilot channel;
- the SIR value is reported to the transmitting unit;
- a report is received from the transmitting unit for each transmitting interval following a first link quality report of a transmission session over the pilot channel;
- a discrepancy value for each transmission interval is determined;
- the discrepancy value is a discrepancy between the reported SIR and a conversion function from transmission parameter to SIR based on the transmission parameter for the transmission interval; and
- the measured SIR value is corrected with the discrepancy value for the transmission interval".

The Examiner respectfully disagrees. Lundby clearly discloses the SIR value is measured on the pilot channel **(0035, where Lundby discloses measuring C/I of the pilot channel)**. Lundby clearly discloses the SIR value is reported to the transmitting unit **(0035, where Lundby discloses a transmission of a link quality indicator to**

the base station). Lundby clearly discloses a discrepancy value for each transmission interval is determined **(0042, where Lundby discloses calculation of DIFF)**. Lundby discloses the measured SIR value is corrected with the discrepancy value for the transmission interval **(0044, where Lundby discloses adjusting a quality based on DIFF)**.

As for the limitations "the discrepancy value is a discrepancy between the reported SIR and a conversion function from transmission parameter to SIR based on the transmission parameter for the transmission interval; a report is received from the transmitting unit for each transmitting interval following a first link quality report of a transmission session over the pilot channel", please see the following rejection with Lundby in view of TR 25.858.

Claim Objections

Claim 7 is objected to because of the following informalities: Claim 7 depends on itself as listed in the amended claims. However, in the remarks the Applicant states that claim 7 is dependent from claim 1. Thus claim 7 is examined as to be dependent from claim 1. Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 3, 7, 8, 10, 11, 14, 15, 17, 21, 22, 24, 25, 27-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lundby et al. (US 2002/0110088 herein Lundby) in view of 3GPP TR 25.858 V1.0 (2001-09) herein TR 25.858.

Claim 1, Lundby discloses a method for providing link adaptation in a wireless communication system **(0027, where Lundby discloses link adaptation)**, Lundby discloses obtaining in a current link quality measure of a communication link between a transmitting unit and a receiving unit **(0035, where Lundby discloses measurement of link quality at a remote station)**; Lundby discloses determining a Signal-to-Interference Ratio (SIR) value of the communication link by **(0035, where Lundby discloses Carrier to Interference ration (C/I))**; Lundby discloses measuring the SIR value of a pilot channel **(0035, where Lundby discloses measuring C/I of the pilot channel)**; Lundby discloses reporting the SIR value to the transmitting unit **(0035, where Lundby discloses a transmission of a link quality indicator to the base station)**; Lundby discloses determining a discrepancy value for each transmission interval **(0042, where Lundby discloses calculation of DIFF)**, Lundby discloses correcting the current link quality measure based on the determined value by correcting a measured SIR value with the discrepancy value for the transmission interval **(0042, 0044, where Lundby discloses adjusting a quality based on DIFF)**.

Lundby does not disclose in the same embodiment the discrepancy value being a discrepancy between the reported SIR and a conversion function from a transmission parameter to SIR based on the transmission parameter for the transmission interval.

However, in an alternative embodiment, Lundby discloses the discrepancy value being a discrepancy between the reported SIR and a conversion function from a

transmission parameter to SIR based on the transmission parameter for the transmission interval **(0055, where Lundby discloses transmission parameters, 0059, where Lundby discloses current DRC values compared against projected values to provide a differential indicator used in a table, which allows a transmitter to receive forward link (FL) quality information, 0042, where Lundby discloses a link quality metric to C/I)**. Therefore it would have been obvious for one of ordinary skill in the art at the time the invention was made to slightly modify Lundby to a DRC message to indicate channel quality experienced by the UE, at different periods, to the system.

Lundby does not explicitly disclose receiving a report from the transmitting unit for each transmitting interval following a first link quality report of a transmission session over the pilot channel.

In an analogous art, TR 25.858 discloses receiving a report from the transmitting unit for each transmitting interval following a first link quality report of a transmission session over the pilot channel **(8.2.2.2.1, 8.2.2.2.2, where TR 25.858 discloses UE feedback operation and parameters provided to the UE such as default power offset, BLER thresholds and corresponding feedback cycles)**. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Lundby to provide parameters to the UE as taught by TR 25.858 so as to adhere to 3GPP standards.

Claim 17, Lundby discloses an electronic communication apparatus for supporting link adaptation of a communication link **(0027, where Lundby discloses link adaptation)**, Lundby discloses a receiver; a transmitter unit; a memory **(0025,**

0066, where Lundby discloses transmitting to and receiving from a base station and memory); a measurement unit for determining a current link quality measure of a communication link (**0035, Fig. 3A: 204, where Lundby discloses measurement of link quality at a remote station**); Lundby inherently discloses a controller (**Since Lundby discloses a remote station, i.e. a cell phone**); Lundby discloses a correction unit adapted to determine a SIR value of the communication link (**0035, where Lundby discloses Carrier to Interference ration (C/I)**); Lundby discloses to correct the current link quality measure based on the determined value (**0042, where Lundby discloses adjusting the C/I value**).

The amendments to claim 17 are analyzed with respect to the limitations as discussed in claim 1.

Claim 32, Lundby discloses a computer program product directly loadable into the memory of a mobile terminal having digital computer capabilities, comprising software code portions for performing the following steps of when said product is run by said mobile terminal (**0066, where Lundby discloses software on memory**): Lundby discloses obtaining in a current link quality measure of a communication link (**0035, where Lundby discloses measurement of link quality at a remote station**); Lundby discloses determining a Signal-to-Interference Ratio (SIR) value of the communication link (**0035, where Lundby discloses Carrier to Interference ration (C/I)**); Lundby discloses correcting the current link quality measure based on the determined value (**0042, where Lundby discloses adjusting the C/I value**).

The amendments to claim 32 are analyzed with respect to the limitations as discussed in claim 1.

Claim 3, Lundby discloses transmitting a link quality report being based on the corrected link quality measure **(0042, where Lundby discloses transmitting a quality message)**.

Claim 7, Lundby does not disclose an index to address a look-up table for retrieving a corresponding SIR value.

In an analogous art, TR 25.858 discloses, an index to address a look-up table for retrieving a corresponding SIR value **(8.2.2.2.4, where TR 25.858 discloses a TFRC and power offset)**. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Lundby to include a TFRC indicator as taught by TR 25.858 so as to adhere to a well known and practiced standard to reap short- and long-term cost-savings and competitive benefits.

Claim 8, Lundby discloses wherein a discrepancy value is determined for the reporting interval **(0036, where Lundby discloses a differential indicator)**, Lundby discloses which is based on the difference between the SIR value retrieved from the look-up table **(0041, 0042, where Lundby discloses historical C/I measurements and generation of "DIFF")**, Lundby discloses a previous SIR value that was used to form the previous link quality report **(0039, where Lundby discloses a proj_C_I)**, Lundby discloses the discrepancy value is added to the current link quality measure to form the corrected link quality measure **(Fig. 3B: 310 and 312, where Lundby discloses adjusting the proj_C_I and transmitting the proj_C_I)**.

Claim 10, Lundby discloses wherein a discrepancy value is determined for the reporting interval **(0036, where Lundby discloses a differential indicator)**, Lundby discloses which is based on a SIR estimation of a signal of a transmission interval transmitted over a pilot channel **(0035, where Lundby discloses quality measurement of a pilot channel)**, Lundby discloses corrected for any power gain factor and the SIR value retrieved from the look-up table **(0041, 0042, where Lundby discloses historical C/I measurements and "DIFF")**, and the discrepancy value is added to the current link quality measure to form the corrected link quality measure **(Fig. 3B: 310 and 312, where Lundby discloses adjusting the proj_C_I and transmitting the proj_C_I)**.

Claim 11, as analyzed with respect to the limitations as discussed in claim 10.

Claim 14, Lundby does not disclose mapping the corrected current link quality measure against transmission parameter indicators stored in a look-up table, wherein the corrected link quality measure is used to address said look-up table; retrieving a transmission parameter indicator that matches the corrected link quality measure; and incorporating the retrieved transmission parameter indicator into the link quality report.

In an analogous art, TR 25.858 discloses mapping the corrected current link quality measure against transmission parameter indicators stored in a look-up table **(8.2.2.2.1, 8.2.2.2.3, 8.2.2.2.4, where TR 25.858 discloses comparison of BLER with TFRCx)**, TR 25.858 discloses wherein the corrected link quality measure is used to address said look-up table **(8.2.2.2.1, 8.2.2.2.3, 8.2.2.2.4, where TR 25.858 discloses comparison of BLER with TFRCx)**; TR 25.858 discloses retrieving a transmission

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parameter indicator that matches the corrected link quality measure; and incorporating the retrieved transmission parameter indicator into the link quality report **(8.2.2.2.1, where TR 25.858 discloses sending the parameter back to the network)**.

Claim 15, as analyzed with respect to the limitations as discussed in claim 14.

Claim 21, as analyzed with respect to the limitations as discussed in claim 7.

Claim 22, as analyzed with respect to the limitations as discussed in claim 8.

Claim 24, as analyzed with respect to the limitations as discussed in claim 10.

Claim 25, as analyzed with respect to the limitations as discussed in claim 11.

Claim 27, as analyzed with respect to the limitations as discussed in claim 14.

Claim 28, as analyzed with respect to the limitations as discussed in claim 15.

Claim 29, as analyzed with respect to the limitations as discussed in claim 1.

Claim 30, Lundby discloses wherein the apparatus is a mobile radio terminal **(0024, where Lundby discloses a wireless phone)**.

Claim 31, as analyzed with respect to the limitations as discussed in claim 30.

Claims 9, 12, 13, 23 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lundby in view of TR 25.858 in view of Oestreich (US 2003/0003875).

Claim 9, Lundby in view of TR 25.858 does not disclose wherein the discrepancy value is a filtered discrepancy value, which is based on a SIR value of each transmission interval of a reporting interval and a previous SIR value that was used to form the previous link quality report.

In an analogous art, Oestreich discloses wherein the discrepancy value is a filtered discrepancy value, which is based on a SIR value of each transmission interval of a reporting interval and a previous SIR value that was used to form the previous link quality report (**Fig. 3: dBER and sliding BER, added to the SIR at different intervals**). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Lundby in view of TR 25.858 to include using a dBER and sliding BER as taught by Oestreich so as to reduce interference and improve transmission power control (**0008, 0009**).

Claim 12, as analyzed with respect to the limitations as discussed in claim 9.

Claim 13, as analyzed with respect to the limitations as discussed in claim 9.

Claim 23, as analyzed with respect to the limitations as discussed in claim 9.

Claim 26, as analyzed with respect to the limitations as discussed in claim 12.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MEHMOOD B. KHAN whose telephone number is (571)272-9277. The examiner can normally be reached on Monday - Friday 8:30 am - 5:00 pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lester Kincaid can be reached on 571-272-7922. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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